

REMARKS

The applicant respectfully requests reconsideration in view of the amendments and the following remarks. Support for amended claim 23 can be found in claims 27, 31 and 32. In addition, the applicant has amended from open language “comprises” to partially open and partially closed language “consists essentially of”.

Claims 23, 24, 26-33, 35-37, 41, and 48 remain rejected under 35 U.S.C. 102(b) as being anticipated by Brown et al., U.S. 5,288,619 (Brown). Claims 23-37, 41, 42, 46, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown and in further view of the following rationale. Claims 23-37, 39, 41, 42, 46, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown and further in view of Pettrone et. al., U.S. 5,240,835 (Pettrone)¹ and Perner et. al., U.S. 5,009,805 (Perner). Claims 23-27, 31-32, 35, 36, 41 and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Hajjar et al. (IDS, submitted 12/22/08). The applicant respectfully traverses these rejections.

Rejections Over Brown

Claims 23, 24, 26-33, 35-37, 41 and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Brown. Claims 23-37, 41, 42, 46, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown as applied to 23, 24, 26-33, 35-38, 40 and 41 above and in further view of the following rationale. Claims 23-37, 39, 41, 42, 46, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown and further in view of Pettrone and Perner.

The present invention specifically aims at the preparation of such incompletely (partially) acrylated polyols which, as explained on the bottom of page 2 to the top of page 3 of the application and are of specific value in preparing dual-cure systems, i.e. polymer systems which

¹ It appears that there was an obvious typographical error with respect to the patent no. The Examiner inadvertently used Perner's Patent no.

are radiation-curable, and, in addition, thermally curable. Such systems are of particular advantage in view of the very low proportion of remaining extractable constituents. This particular advantage is further illustrated by comparative example 1 (i.e. example 4) which illustrates that by conventional methods the proportion of total extractables after radiation curing and thermal curing is much higher (33 or 47 % by weight) if compared to the content of extractables observed according to the present invention (see for example proportions of less than 5 % obtained according to examples 3a and 3b of the present invention) (see claim 47).

In the middle of page 4 of the office action mailed June 10, 2009, the Examiner states that the applicant uses open claim language "comprises". The applicant has amended claim 23 to partially open and partially closed language "consisting essentially of" which would exclude any ingredient or any step that materially effects the claimed invention.

Brown teaches away from the present invention in view of the fact that it is suggested to hydrogenate said trans-esterified esters, so that said prior art compounds would not be suitable as monomers for preparing polymer compounds in a dual-cure system as illustrated by the present invention.

None of said prior art documents as cited in the office action teach or suggest to prepare such incompletely (partially) acrylated polyols which may be used for preparing improved dual-cure systems as illustrated by the present invention.

The applicant believes that Brown is not relevant at all for evaluating patentability of the present invention. Brown does not relate to the technical field of preparing further polymerizable acrylated polyols and, in particular, does not address the problem of specifically preparing incompletely acrylated polyols by means of enzymes. To the contrary, as can be taken from the abstract or from claim 1 of Brown one mandatory step of the enzymatic transesterification

method is the hydrogenation of the obtained fatty acid mixture. In other words, the product obtained according to Brown is hydrogenated, i.e. no longer applicable as polymerizable polyol, as C=C bounds have been hydrogenated.

The additional disclosure of Pettrone does not provide further guidance to a person of ordinary skill in the art. Again, Pettrone teaches away from the present invention. As can be taken from column 2, lines 50 to 52, the enzymatic conversion reaction as disclosed by Pettrone is based on the enzyme activity of a transacylases enzyme. Transacylases, however, belong to the enzyme class E.C.2.3.1 while hydrolases as used according to the present invention belong to the class E.C. 3 (see independent claim 23). Therefore, the teaching of Pettrone is based on the use of a biocatalyst residing on a completely different enzymatic mechanism, i.e. transfer of acyl groups rather than hydrolytic activity as required according to the present invention. Finally, a person of ordinary skill in the art would not be motivated by the teaching of Pettrone to provide the claimed method of the invention because Pettrone does not specifically address the problem of preparing incompletely(partially) acrylated polyols which are of specific advantage in preparing dual-cure systems (characterized by a surprisingly low content of extractables).

Finally, the teaching of Perner does not at all address the enzymatic preparation of incompletely acrylated polyols.²

A statement that modifications of the prior art to meet the claimed invention would have been "obvious to one of ordinary skill in the art at the time the invention was made" because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective

² In the last response the undersigned inadvertently referred to Pettrone instead of Perner with respect to this statement.

reason to combine the teachings of the references. *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). See MPEP § 2143.01 IV. “[R]jections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1396 (2007) quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). Furthermore, the Examiner cannot selectively pick and choose from the disclosed parameters without proper motivation as to a particular selection. The mere fact that a reference may be modified to reflect features of the claimed invention does not make the modification, and hence the claimed invention, obvious unless the prior art suggested the desirability of such modification. *In re Mills*, 916 F.2d 680, 682, 16 USPQ2d 1430 (Fed. Cir. 1990); *In re Fritch*, 23 USPQ2d 1780 (Fed. Cir. 1992). Thus, it is impermissible to simply engage in a hindsight reconstruction of the claimed invention where the reference itself provides no teaching as to why the applicant’s combination would have been obvious. *In re Gorman*, 933 F.2d 982, 987, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991).

The applicant have found that the applicability of such incompletely acrylated monomers in a dual-cure polymerization with the surprising observation that polymers are obtainable from these monomers which are characterized by a surprisingly low proportion of total extractables as illustrated in the experimental section of the present application. A person of ordinary skill in the art would not have expected said superior effect even upon combining the teaching of all the prior art references cited by the examiner. For the reasons, these rejections should be withdrawn.

Rejection Over Hajjar

Claims 23-27, 31-32, 35, 36, 41 and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Hajjar. Hajjar is disclosed at page 2, lines 10-12 of the applicant's specification. The disclosure of Hajjar is limited to a process for preparing monomeric acrylic acid esters by means of the lipase-catalyzed esterification of aliphatic **diols** with ethyl acrylate. Hajjar does not specifically mention the esterification of higher polyols (having at least 3 esterifiable hydroxyl groups as is claimed by the applicant). In addition, Hajjar does not refer to the **incomplete** esterification of higher polyols (having at least 3 esterifiable hydroxyl groups). For the above reasons, this rejection should be withdrawn.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Applicant believes no additional fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 03-2775, under Order No. 13111-00021-US from which the undersigned is authorized to draw.

Dated: September 10, 2009

Respectfully submitted,

Electronic signature: /Ashley I. Pezzner/

Ashley I. Pezzner

Registration No.: 35,646

CONNOLLY BOVE LODGE & HUTZ LLP

1007 North Orange Street

P. O. Box 2207

Wilmington, Delaware 19899-2207

(302) 658-9141

(302) 658-5614 (Fax)

Attorney for Applicant